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(54) **BUILDING INTEGRATED PHOTOVOLTAIC SYSTEM FOR TILE ROOFS**

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(57) **ABSTRACT**

Building integrated photovoltaic (BIPV) systems provide for solar panel arrays that can be aesthetically pleasing to an observer, with minimal visible difference between photovoltaic and non-photovoltaic areas of the BIPV system. BIPV systems can be incorporated as part of roof surfaces as built into the structure of the roof, particularly as roofing tiles that have photovoltaic elements embedded or incorporated into the body of the roofing tiles. BIPV systems can also include mimic or dummy tiles that appear similar to tiles with photovoltaic elements, but do not collect solar energy. In some configurations, the appearance of BIPV tile roof systems can be generally uniform to an observer at ground level, where the blending and distribution of photovoltaic and non-photovoltaic elements generate a consistent and elegant appearance that camouflages any differences between photovoltaic tile or non-photovoltaic tiles.

15 Claims, 13 Drawing Sheets